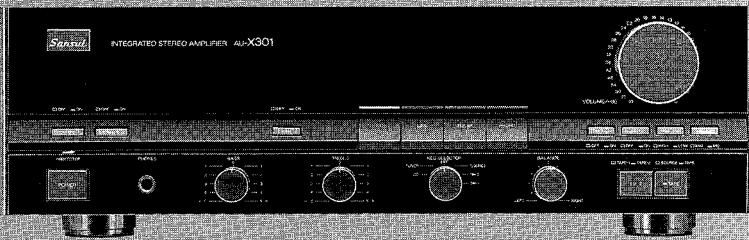


# SERVICE MANUAL

## INTEGRATED AMPLIFIER **SANSUI AU-X201/X301**



### CAUTION

1. Parts identified by the  $\Delta$  symbol on the schematic diagram and the parts list are critical for safety. Use only replacement parts that have critical characteristics recommended by the manufacturer.
2. Make leakage-current or resistance measurements to determine that exposed parts are acceptably insulated from the supply circuit before returning the appliance to the customer.

AU-X201/X301

### •SPECIFICATIONS

#### <AU-X201>

##### Power output

Min. RMS, both channels driven, from 20 to 20,000 Hz, with no more than 0.05% total harmonic distortion.

30 watts per channel into 1 kHz, 8 ohms.

##### Frequency response (at 1 watt)

Overall (from CD) ..... 1 to 100,000 Hz, +0 dB  
—3 dB

##### Signal to noise ratio (short-circuit, A-network)

PHONO (MM) ..... 75 dB

CD, TUNER, LINE ..... 105 dB

TAPE PLAY-1, 2 ..... 105 dB

##### Power consumption

150 watts Maximum

250 watts Maximum

Weight ..... 7.0 kg (15.4 lbs) net

#### <AU-X301>

##### Power output

Min. RMS, both channels driven, from 20 to 20,000 Hz, with no more than 0.05% total harmonic distortion.

65 watts per channel into 1 kHz, 8 ohms.

##### Frequency response (at 1 watt)

Overall (from CD) ..... 1 to 150,000 Hz, +0 dB  
—3 dB

##### Signal to noise ratio (short-circuit, A-network)

PHONO (MC) ..... 65 dB

PHONO (MM) ..... 80 dB

CD, TUNER, LINE ..... 105 dB

TAPE PLAY-1, 2 ..... 105 dB

##### Power consumption

330 watts 410 VA Rated

460 watts Maximum

Weight ..... 9.5 kg (20.9 lbs) net

11.0 kg (24.3 lbs) packed

#### <AU-X201/301>

Load impedance ..... 4 to 16 ohms

Total harmonic distortion ..... less than 0.05% at or below rated min. RMS power output

Intermodulation distortion (60 Hz: 7 kHz = 4.1 SMPTE method) ..... less than 0.05% at rated power output

RIAA curve deviation (PHONO-MM, 20 Hz to 20 kHz) ..... +0.5 dB, -0.5 dB

Input sensitivity and impedance (at 1 kHz)  
PHONO (MC) ..... 420  $\mu$ V/100 or 22 ohms (AU-X301 only)

PHONO (MM) ..... 3.5 mV/47 kohms

(Max. input capability: 150 mV at 1 kHz, less than 0.1% total harmonic distortion)

CD, TUNER, LINE ..... 200 mV/47 kohms

TAPE PLAY-1, 2 ..... 200 mV/47 kohms

##### Output level (at 1 kHz)

TAPE REC-1, 2 ..... 200 mV into 47 kohms

##### Controls and Filter

BASS .....  $\pm 8$  dB at 50 Hz

TREBLE .....  $\pm 8$  dB at 10 kHz

SUBSONIC ..... -3 dB at 16 Hz (6 dB/oct)

LOUDNESS ..... +8 dB at 50 Hz

(VOLUME: -30 dB position)

..... +4 dB at 10 kHz

Power requirements ..... AC 120V/220V/240V,  
50/60 Hz

For U.S.A. & Canada ..... AC 120V, 60 Hz

Dimensions ..... 448 mm (17-11/16") W  
136 mm (5-3/8") H  
311 mm (12-1/4") D

\* Design and specifications subject to changes without notice for improvements.

\* Due to local laws and regulations, this unit sold in some areas are not equipped with variable voltage selectors.

**Sansui**

SANSUI ELECTRIC CO., LTD.

**NOTE**

1. The symbols, UL, CSA, SA, BS, UK, EU, AS, SS, XX <EXPORT> and XX-V <EXPORT(V)> on the parts list and the schematic diagram mean followings respectively.

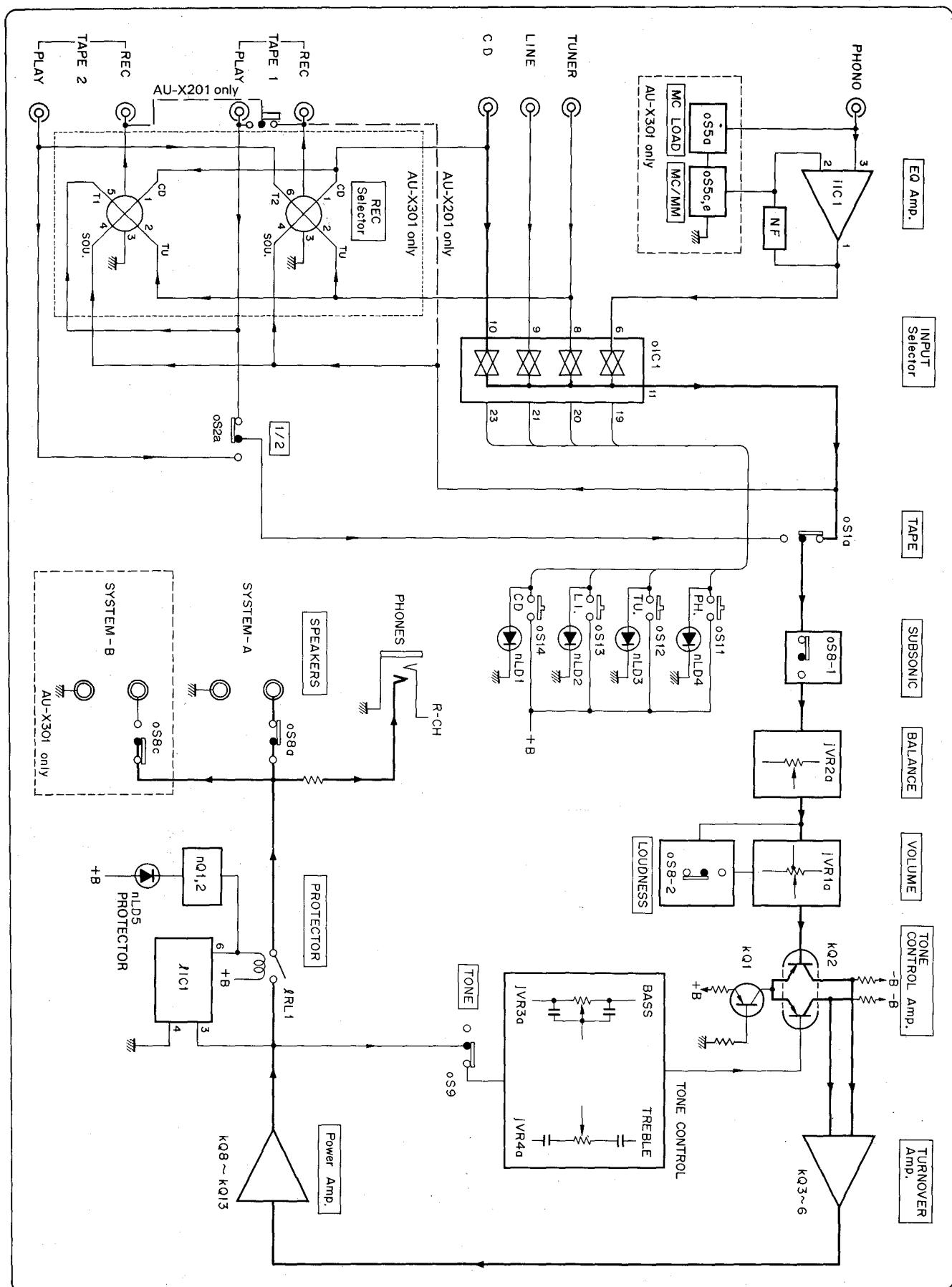
UL..... Manufactured for U.S.A market.  
 (Underwriters Laboratories approved model.)  
 CSA ..... Manufactured for Canadian market.  
 SA ..... Manufactured for South African market.  
 BS, UK ..... Manufactured for United Kingdom market.  
 EU ..... Manufactured for European market.  
 AS ..... Manufactured for Australian market.  
 SEV ..... Manufactured for Swiss Market.  
 SS ..... Manufactured for Saudi Arabia market.  
 XX <EXPORT> ..... Standard Version with Inner Voltage Selector.  
 XX-V <EXPORT(V)> .. Standard Version with Outer Voltage Selector.  
 NON MARK ..... Common Parts.

2. Some printed circuit boards are not supplied assembled. To separate these in this service manual, the stock numbers are not indicated for these boards. However, stock numbers for individual parts are indicated.
3. Since some capacitors and resistors are omitted from parts lists in this service manual, refer to the Common Parts List for capacitors and resistors, which was issued on March 1987.
4. Abbreviations in this service manual are as follows.

**•Abbreviations List**

C.R. : Carbon Resistor	E.B.L. : Low Leak Bi-Polar
S.R. : Solid Resistor	Electrolytic Capacitor
Ce.R. : Cement Resistor	Ta.C. : Tantalum Capacitor
M.R. : Metal Film Resistor	F.C. : Film Capacitor
F.R. : Fusing Resistor	M.P. : Metallized Paper Capacitor
N.I.R. : Non-Inflammable Resistor	P.C. : Polystyrene Capacitor
A.R. : Array Resistor	G.C. : Gimmic Capacitor
C.C. : Ceramic Capacitor	A.C. : Array Capacitor
C.T. : Ceramic Capacitor, Temperature Compensation	V.R. : Variable Resistor
E.C. : Electrolytic Capacitor	S.V.R. : Semi Variable Resistor
E.L. : Low Leak Electrolytic Capacitor	SW. : Switch
E.B. : Bi-Polar Electrolytic Capacitor	Chip R. : Chip Resistor
	Chip C. : Chip Capacitor

## **1. BLOCK DIAGRAM**



## 2. ELECTRIC PARTS LIST OF BOARD

### 2-1. F-5716 Tone Control V.R. Board (Stock No. 01049601 = AU-X201/01048501 = AU-X301)

Parts No.	Stock No.	Description
jC1	48103000	0.22μF 50V E.B.
jC5	48103000	0.22μF 50V E.B.
jVR1	83005400	150kΩ (B) V.R., VOLUME
jVR2	83003200	250KMN V.R., BALANCE
jVR3	83003100	50kΩ (C) V.R., BASS
jVR4	83003100	50kΩ (C) V.R., TREBLE
nLD1	48849300	SEL3913K, CD
nLD2	48849300	SEL3913K, LINE
nLD3	48849300	SEL3913K, TUNER
nLD4	48849300	SEL3913K, PHONO
oS1	48837500	Push SW., TAPE
oS2	48837500	Push SW., 1/2 (AU-X301)
	48837300	Push SW., 1/2 (AU-X201)
oS8	83032000	Push SW., SUBSONIC•LOUDNESS
oS9	83002800	Push SW., TONE

### 2-2. F-5718 PROTECTOR Ind. Board

Parts No.	Stock No.	Description
nLD5	48866300	AY2222S

### 2-3. F-5719 PHONES Jack Board

Parts No.	Stock No.	Description
oJ1	83002600	Jack,

### 2-4. F-5720 SPEAKERS Switch Board

Parts No.	Stock No.	Description
△kr35	46624700	220Ω 2W N.I.R. (AU-X301)
△	46249700	220Ω 1W N.I.R. (AU-X201)
oS7	48837200	Push SW., SPEAKERS (AU-X301)
	83005200	Push SW., SPEAKERS (AU-X201)

### 2-5. F-5721 SPEAKERS Terminal Board (AU-X301)

Parts No.	Stock No.	Description
oZ4	48569100	8P Terminal, Speaker

### 2-6. F-5723 SPEAKERS Terminal Board (AU-X201)

Parts No.	Stock No.	Description
oZ4	48699700	4P Terminal, Speaker

### 2-7. F-5717 Power Amp. Board

(Stock No. 01049701 = AU-X201/01048601 = AU-X301)

Parts No.	Stock No.	Description
●Transistor		
kQ1	07299601	2SA1115
	or 46392201	2SA1175
kQ2	48577701	2SA1349
kQ3	46728301	2SC2705
	or 48113001	2SC2229
kQ4	46728301	2SC2705
	or 48113001	2SC2229
kQ5	03064001	2SC1904
	or 46128101	2SC2911
kQ6	03007901	2SA899
	or 46128001	2SA1209
△kQ7	03067401	2SC1845
kQ8	48061801	2SC3244
kQ9	48064001	2SA1284
kQ10	46728901	2SC3298 (AU-X301)
	or 48158701	2SC2591 (AU-X301)
	07206401	2SD600K (AU-X201)
kQ11	46728801	2SA1306 (AU-X301)
	or 48158601	2SA1111 (AU-X301)
	07206301	2SB631K (AU-X201)
△kQ12	48844201	2SC3856 (AU-X301)
△kQ13	48844401	2SC3854 (AU-X201)
△	48844101	2SA1492 (AU-X301)
	48844301	2SA1490 (AU-X201)
●Diode		
kD1	83000100	1N4148
△kr13	46230200	1kΩ 1/2W N.I.R. (AU-X301)
△	46229800	470Ω 1/2W N.I.R. (AU-X201)
△kr14	46229100	120Ω 1/2W N.I.R. (AU-X301)
△	46228700	56Ω 1/2W N.I.R. (AU-X201)
△kr15	46230200	1kΩ 1/2W N.I.R. (AU-X301)
△	46229800	470Ω 1/2W N.I.R. (AU-X201)
△kr16	46230200	1kΩ 1/2W N.I.R. (AU-X301)
△	46229800	470Ω 1/2W N.I.R. (AU-X201)
△kr17	46230200	1kΩ 1/2W N.I.R. (AU-X301)
△	46229800	470Ω 1/2W N.I.R. (AU-X201)
△kr18	46229100	120Ω 1/2W N.I.R. (AU-X301)
△	46228700	56Ω 1/2W N.I.R. (AU-X201)
△kr22	46228200	33Ω 1/2W N.I.R.
△kr23	46228200	33Ω 1/2W N.I.R.
△kr28	46230200	1kΩ 1/2W N.I.R.
△kr29	46229100	120Ω 1/2W N.I.R.
△kr30	46227400	4.7Ω 1/2W N.I.R.
△kr31	46227400	4.7Ω 1/2W N.I.R.
△kr32	83013200	0.22Ω 5W Ce.R.
△kr33	46623100	10Ω 2W N.I.R. (AU-X301)
△	46248100	10Ω 1W N.I.R. (AU-X201)
△kr34	46247300	2.2Ω 1W N.I.R. (AU-X301)
△	46227000	2.2Ω 1/2W N.I.R. (AU-X201)
△kr38	83013200	0.22Ω 5W Ce.R.
KL1	46851900	Inductor 0.8μH
	or 83020100	Inductor 0.8μH
KVR1	83006900	1kΩ S.V.R., Bias
●Transistor		
IQ1	46581701	2SC1845
IQ2	46581601	2SA992
●IC		
△IIC1	46207600	TA7317P
●Diode		
ID1	83000100	1N4148
ID2	83000100	1N4148
ID3	83024700	1N4003

**2-9. F-5751 EQ Amp. INPUT Terminal Board**  
(Stock No. 01050401 = AU-X201/01049301 = AU-X301)

Parts No.	Stock No.	Description
ID4	83024700	1N4003
ID5	83005000	1N4002
△IR18	46229900	560Ω 1/2W N.I.R. (AU-X301)
△	46229500	270Ω 1/2W N.I.R. (AU-X201)
IC5	48104200	220μF 6.3V E.B.
IRL1	46254900	Relay, AP24D2
•Transistor		
nQ1	03067401	2SC1845
nQ2	03067401	2SC1845
•Diode		
nD1	83000100	1N4148

**2-8. F-5722 Power Supply Board**  
(Stock No. 01050201 = AU-X201/01049101 = AU-X301)

Parts No.	Stock No.	Description
•Transistor		
△mQ1	48061801	2SC3244
△mQ2	48064001	2SA1284
•Diode		
△mD1	83002000	KBU6D (AU-X301)
△	83002100	KBU4D (AU-X201)
△mD2	83020200	DF04M
•Zener Diode		
mDZ1	46114400	05Z15-X
	or 46114500	05Z15-Y
	or 46114600	05Z15-Z
	or 46828000	RD15E-B1
	or 46828100	RD15E-B2
mDZ2	46114400	05Z15-X
	or 46114500	05Z15-Y
	or 46114600	05Z15-Z
	or 46828000	RD15E-B1
	or 46828100	RD15E-B2
△mR12	46623100	10Ω 2W N.I.R.
mC1	48913300	8200μF 63V E.C. (AU-X301)
	48913400	6800μF 42V E.C. (AU-X201)
mC2	48913300	8200μF 63V E.C. (AU-X301)
	48913400	6800μF 42V E.C. (AU-X201)
mC11	08680400	0.01μF 500V C.C.
mC12	08680400	0.01μF 500V C.C.
△pC1	46425800	0.01μF 400V C.C.
△	or 46943200	0.01μF 400V C.C.
△pF1	83021900	Fuse 3A for AU-X301 (XX-V•SS)
△	83021600	Fuse 1.5A for AU-X201 (XX-V•SS)
△	83022200	Fuse 6A for AU-X301 (UL•CSA)
△	83024000	Fuse 3.15A for AU-X301 (EU•UK•SEV)
△	83023600	Fuse 1.25A for AU-X201 (EU•UK•SEV)
△pF2	83021900	Fuse 3A for AU-X301 (XX-V•SS)
△	83021600	Fuse 1.5A for AU-X201 (XX-V•SS)
△	83023100	Fuse 400mA (SEV)
△pS1	48844500	Push SW., POWER

**2-10. F-5735 Selector Switch Board**

Parts No.	Stock No.	Description
oS3	07200200	Slide SW., REC SELECTOR (AU-X301)
oS5	83032100	Push SW., MM/MC•MC LOAD (AU-X301)
oZ1	48528400	2P Terminal, PHONO
oZ3	48528600	6P Terminal, TUNER•LINE•CD

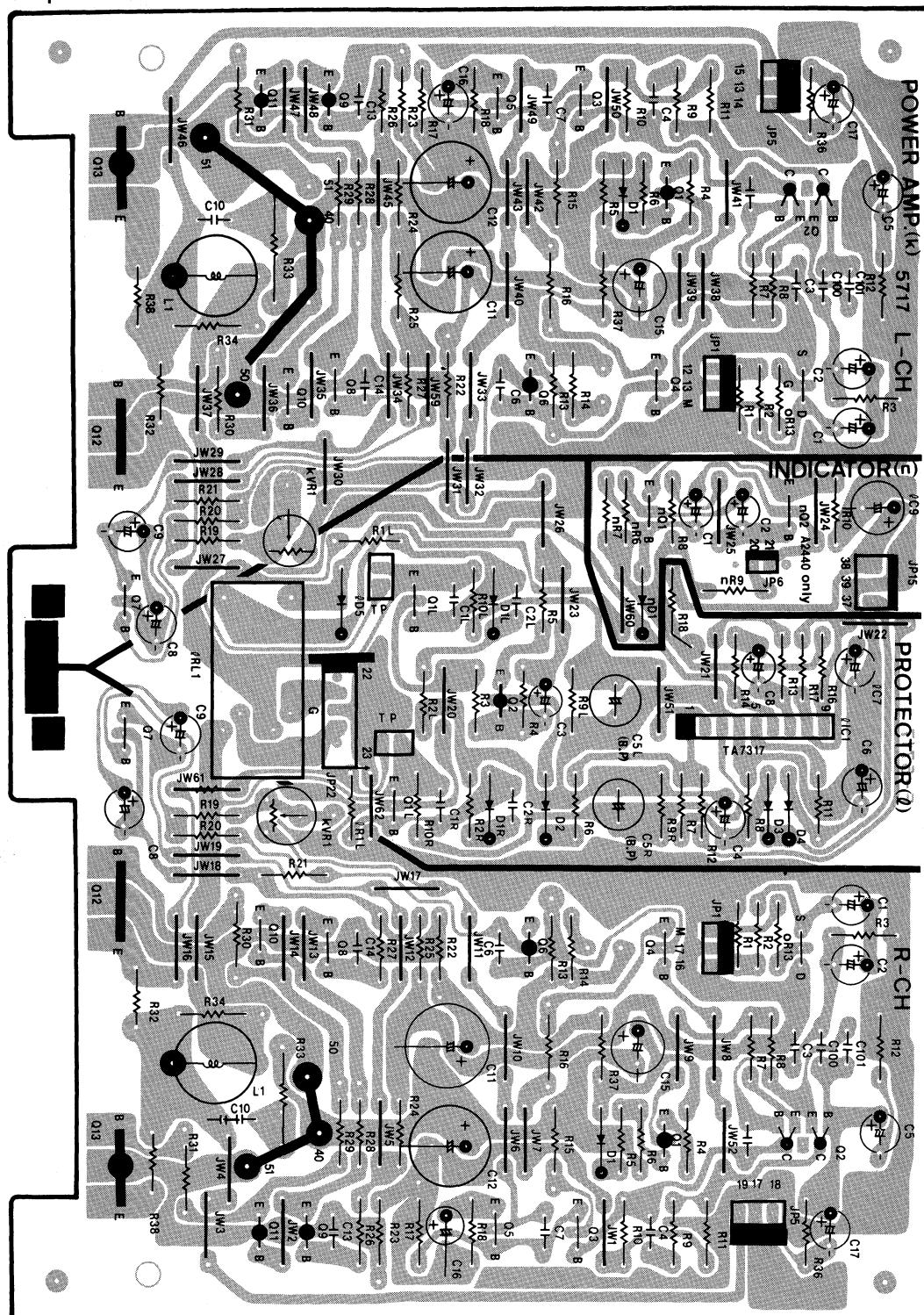
**2-11. F-5752 TAPE/DAT Terminal Board**

Parts No.	Stock No.	Description
oZ2	48528500	4P Terminal,

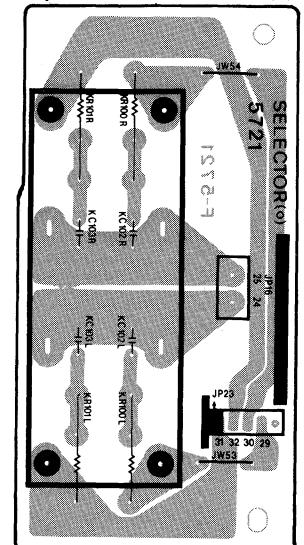
### **3. PARTS LOCATION OF CIRCUIT BOARD**

### **3-1. F-5717 Power Amp. Board**

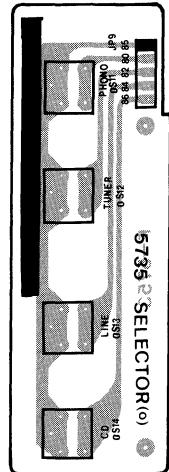
## **Component Side**



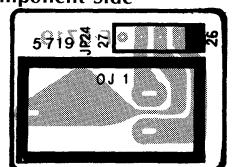
## **3-2. F-5721 SPEAKERS Terminal Board Component Side (AU-X301)**



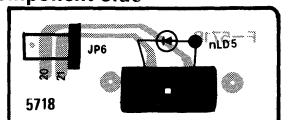
### **3-3. F-5735 Selector Switch Board Component Side**



## **3-4. F-5719 PHONES Component Side Jack Board**

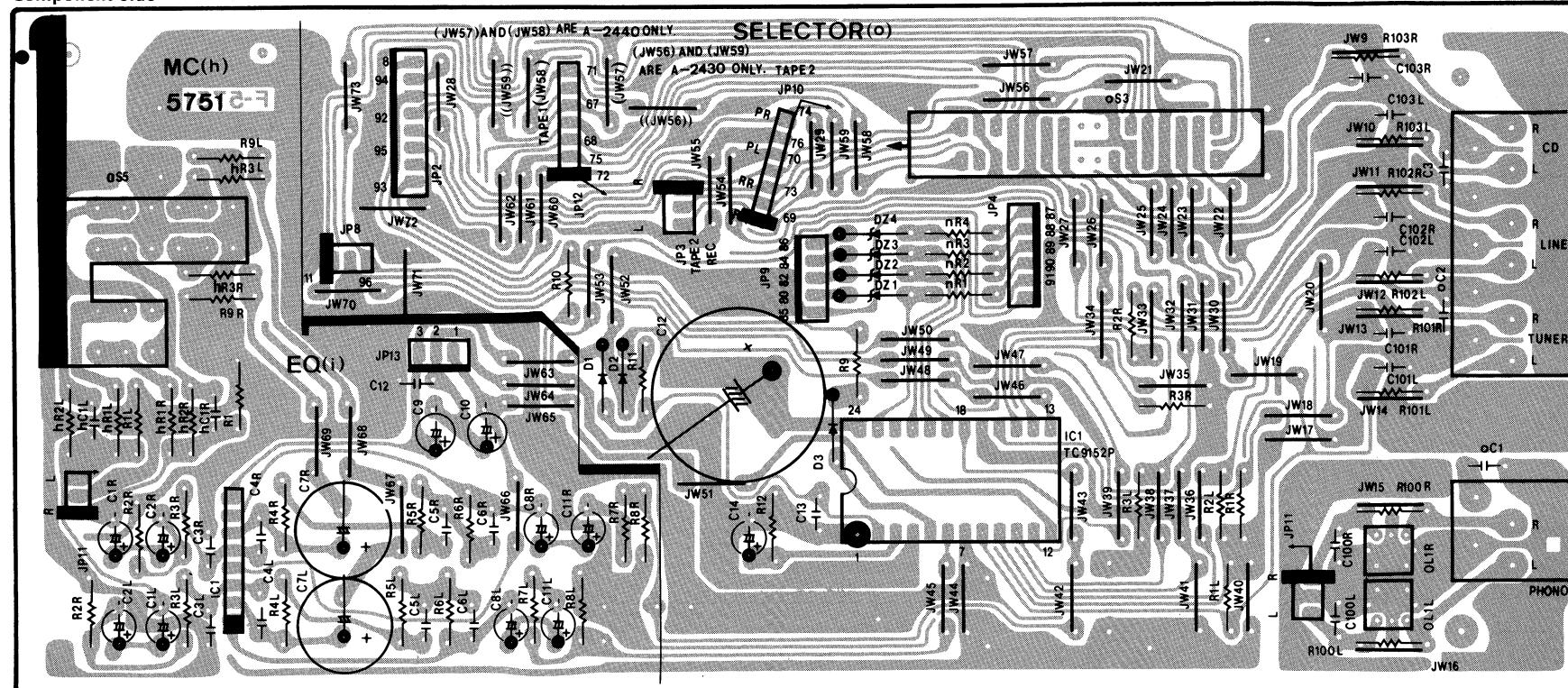


## **3-5. F-5718 PROTECTOR Component Side Ind. Board**

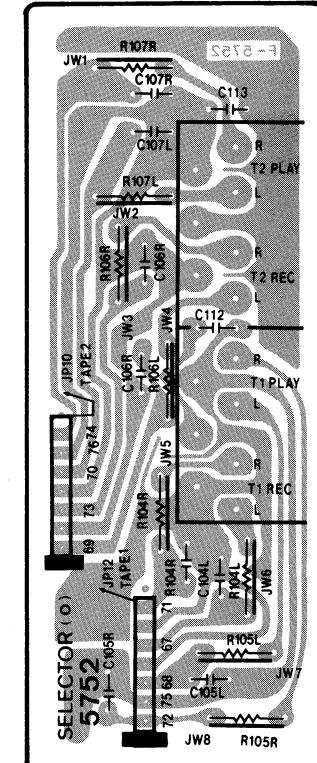


**3-6. F-5751 EQ Amp. & INPUT Terminal Board**

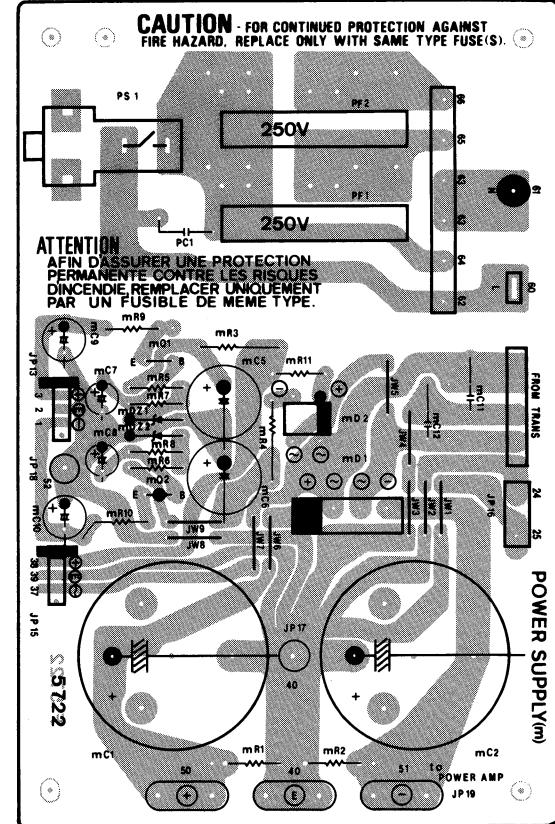
Component Side

**3-8. F-5752 TAPE/DAT Terminal Board**

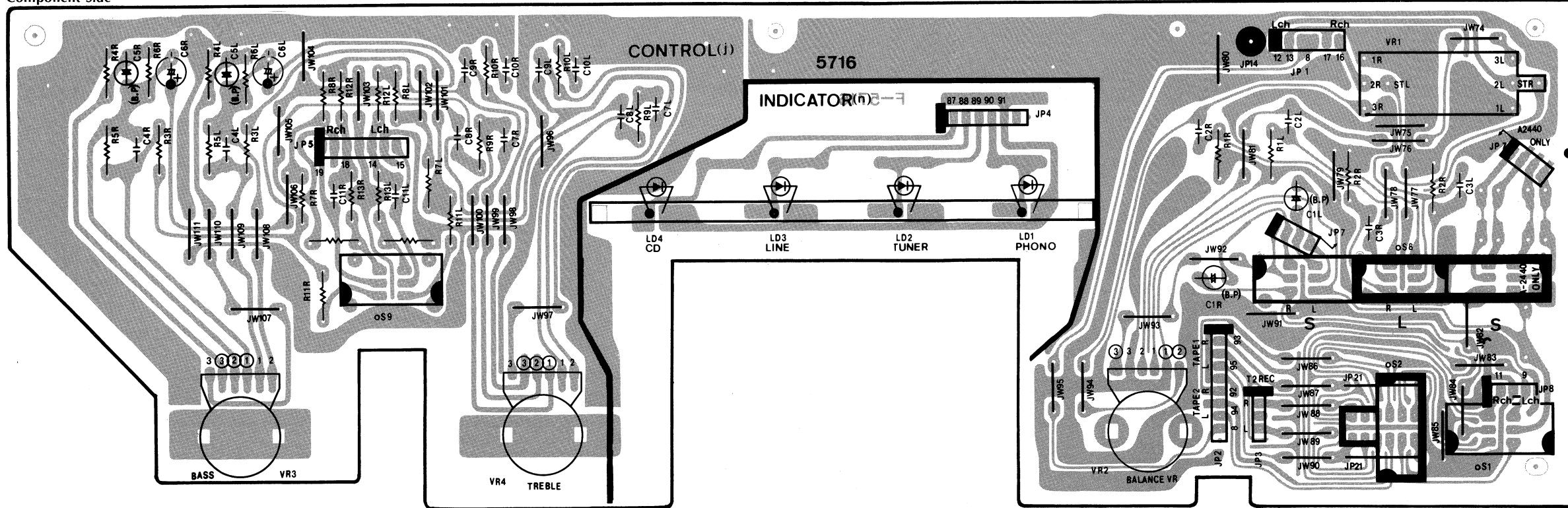
Component Side

**3-9. F-5722 Power Supply Board**

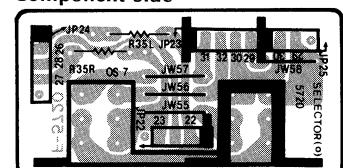
Component Side

**3-7. F-5716 Tone Control Volume Board**

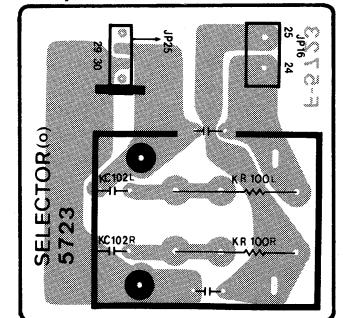
Component Side

**3-10. F-5720 SPEAKERS Switch Board**

Component Side

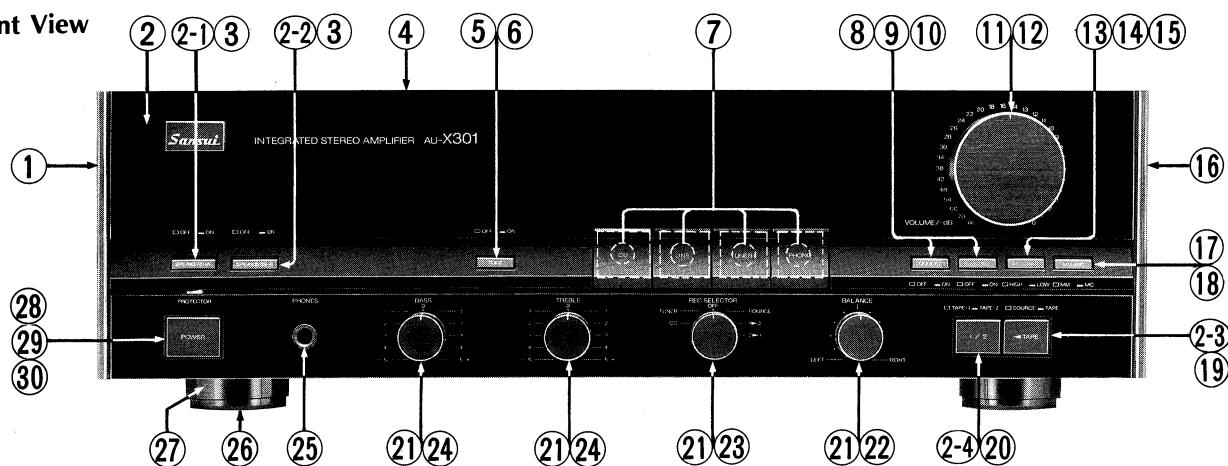
**3-11. F-5723 SPEAKERS Terminal Board (AU-X201)**

Component Side

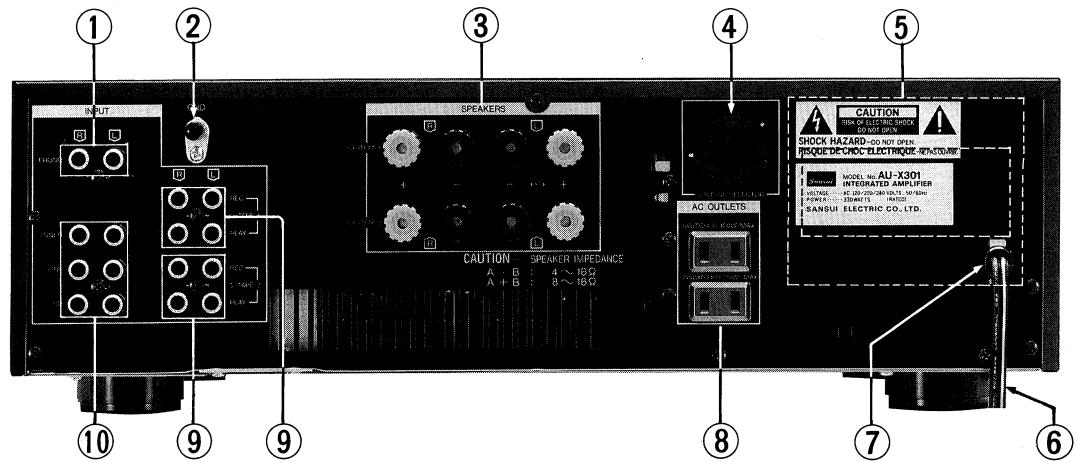


## 4. OTHER PARTS

### • Front View



### • Top View



### Parts List <Front View>

Parts No.	Stock No.	Description
1	84523000	Left Side Panel
2	37500301	Front Panel Ass'y (AU-X301)
2-1	37500401	Front Panel Ass'y (AU-X201)
2-2	84524500	Knob, SPEAKERS-A (AU-X301)
2-3	84524700	Knob, SPEAKERS (AU-X201)
2-4	84524600	Knob, SPEAKERS-B (AU-X301)
3	84525300	Knob, TAPE
4	84525400	Knob, 1/2
5	48837200	Push SW., SPEAKERS (AU-X301)
6	83005200	Push SW., SPEAKERS (AU-X201)
7	84527200	Bonnet
8	84524800	Knob, TONE
9	83002800	Push SW., TONE
10	83003000	Tact SW., PHONO-TUNER-LINE-CD
11	84524900	Knob, LOUDNESS
12	84525000	Knob, SUBSONIC
13	83032000	Push SW., LOUDNESS-SUBSONIC
14	84525500	Knob, VOLUME
15	83005400	150kΩ V.R., VOLUME
16	84525100	Knob, MC LOAD (AU-X301)
17	84526900	Joint Shaft, MC LOAD (AU-X301)

Parts No.	Stock No.	Description
15	83032100	Push SW., MC LOAD-MM/MC (AU-X301)
16	84523100	Right Side Panel
17	84525200	Knob, MM/MC (AU-X301)
18	84527000	Joint Shaft, MM/MC (AU-X301)
19	48837500	Push SW., TAPE
20	48837500	Push SW., 1/2 (AU-X301)
21	48837300	Push SW., 1/2 (AU-X201)
22	83003200	250kΩ V.R., BALANCE
23	48837000	Rotary Selector with Flexible wire (AU-X301)
24	83003100	50kΩ V.R., TREBLE-BASS
25	83002600	Jack, PHONES
26	84532000	Rubber for Leg
27	84526700	Leg
28	84524400	Knob, POWER
29	84526800	Joint Shft, POWER
△30	48844500	Push SW., POWER

### Parts List <Rear View>

Parts No.	Stock No.	Description
1	48528400	2P Terminal, PHONO
2	22301510	Ground Terminal
3	48569100	8P Terminal, SPEAKERS (AU-X301)
4	48699700	4P Terminal, SPEAKERS (AU-X201)
△ 4	84175200	Plug, Voltage Selector (XX-V-SS)
△ 5	07204700	Slide SW., Voltage Selector (EU-UK-SEV)
△ 5	83001509	Power Transformer for AU-X301 (XX-V-SS)
△ 5	83001502	Power Transformer for AU-X301 (UL-CSA)
△ 5	83001505	Power Transformer for AU-X301 (EU-UK-SEV)
△ 5	83001609	Power Transformer for AU-X201 (XX-V-SS)
△ 5	83001605	Power Transformer for AU-X201 (EU-UK-SEV)

Parts No.	Stock No.	Description
6	39104900	Strain Relief (XX-V-UL-CSA)
7	48913500	Strain Relief (SS-EU-UK-SEV-CSA)
△ 7	83003500	Power Supply Cord (XX-V)
△ 7	83003600	Power Supply Cord (XX-V polarized-UL-CSA)
△ 8	48837700	Power Supply Cord (SS)
△ 8	38004300	Power Supply Cord (UK)
△ 8	83000600	Power Supply Cord (EU-SEV)
△ 8	83004100	AC OUTLET (XX-V-SS)
△ 8	83002200	AC OUTLET (XX-V polarized-UL-CSA)
△ 8	83002500	AC OUTLET (EU-SEV)
9	46364800	AC OUTLET (UK)
10	48528500	4P Terminal, TAPE-1-TAPE-2
10	48528600	6P Terminal, TUNER-LINE-CD

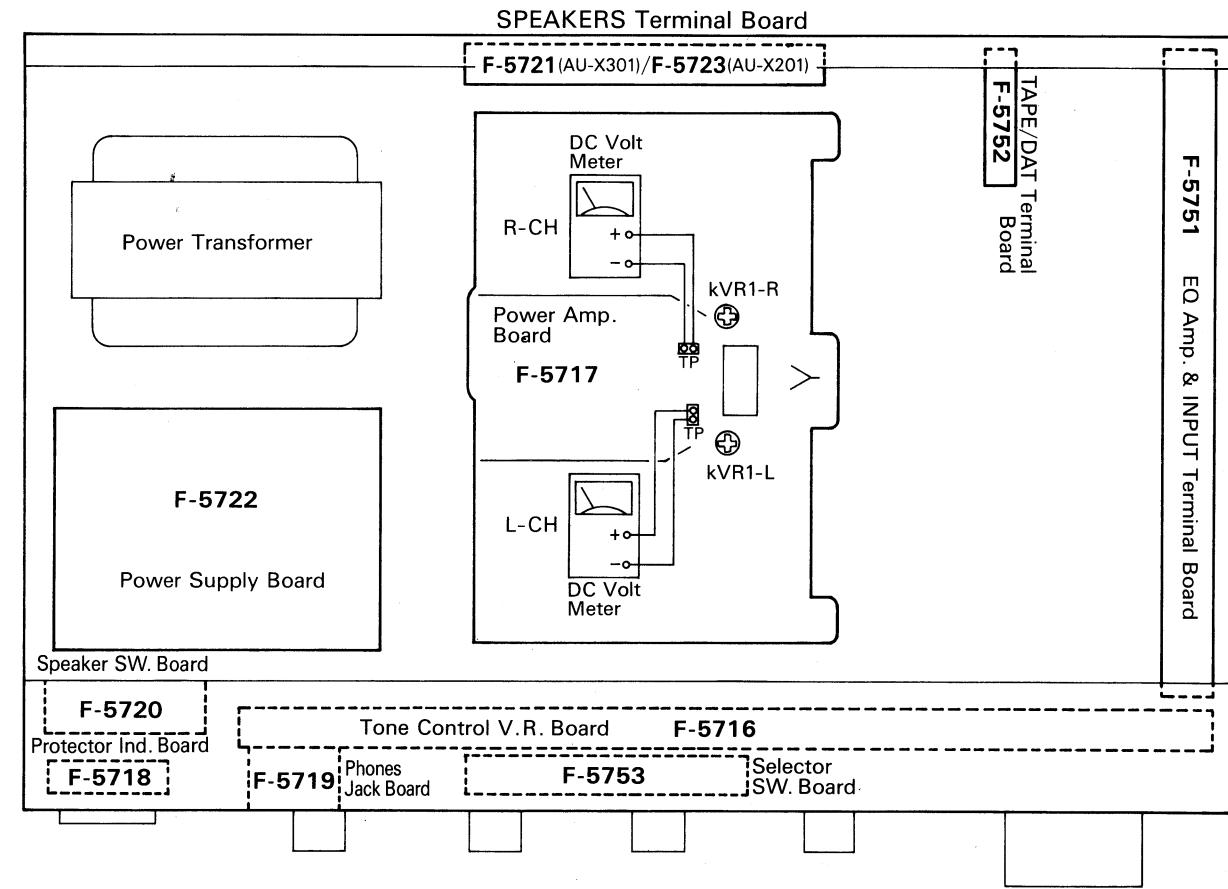
## 5. ADJUSTMENTS

Note: 1) Master Volume .... Minimum  
2) Room Temperature .... 18°C ~ 28°C (65°F ~ 83°F)  
3) For this adjustment, run the unit for more than 5 minutes after the power is switched ON.

4) Before turning ON power switch, set the kVR1 on F-5717 to center position.

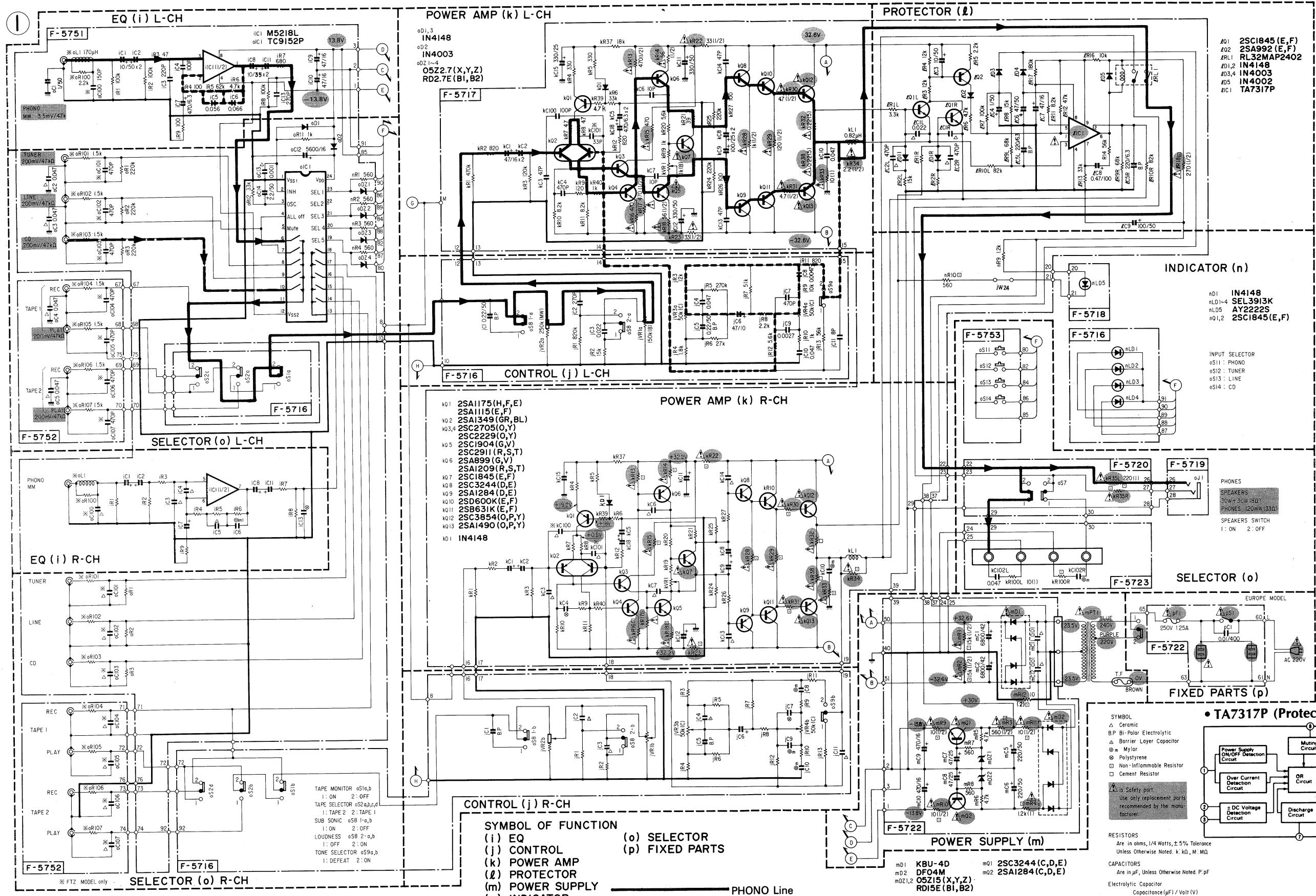
STEP	SUBJECT	MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
1.	Bias Current Adj. <L-ch>	Test Terminal (TP, L-ch), DC Volt Meter	kVR1 <L-ch>	DC 5±2mV	•This bias value is converted from current value to voltage by ohms law.
2.	Bias Current Adj. <R-ch>	Test Terminal (TP, R-ch), DC Volt Meter	kVR1 <R-ch>	DC 5±2mV	

Fig. 5-1 Printed Circuit Board Location and adjustment points.



## 6. SCHEMATIC DIAGRAM

## 6-1. AU-X201 Main Section



2SA992 2SA1306  
 2SA1284 2SC3298  
 2SC1845 2SC2229  
 2SC2705 2SC3244  
 2SC2911 TA7317P

2SA899 2SA1111  
 2SB631 2SC2591  
 2SC1904 2SC2911  
 2SD600 TA7317P

2SA1490 2SA1492  
 2SA1115 2SC3854  
 2SA1175 2SC3856

TA7317P  
 M5220L  
 TC9152P  
 Dot or Silt or Line

DF04M  
 1N4002  
 1N4003  
 1N4148

KBU4D  
 KBU6D  
 0.5Z2.7  
 0.5Z15  
 RD2.7E  
 RD15E

• TA7317P (Protector)  
 SYMBOL  
 △ Ceramic  
 □ Bi-Polar Electrolytic  
 ▲ Barrier Layer Capacitor  
 @ Mylar  
 ◊ Polystyrene  
 □ Non-Inflammable Resistor  
 □ Cement Resistor  
 ▲ Is Safety port.  
 Use only replacement parts recommended by the manufacturer.

RESISTORS  
 Are in ohms, 1/4 Watts, ± 5% Tolerance  
 Unless Otherwise Noted. k, kΩ, M, MΩ  
 CAPACITORS  
 Are in μF, Unless Otherwise Noted. P, pF  
 Electrolytic Capacitor  
 Capacitance (μF) / Volt (V)

A

B

C

D

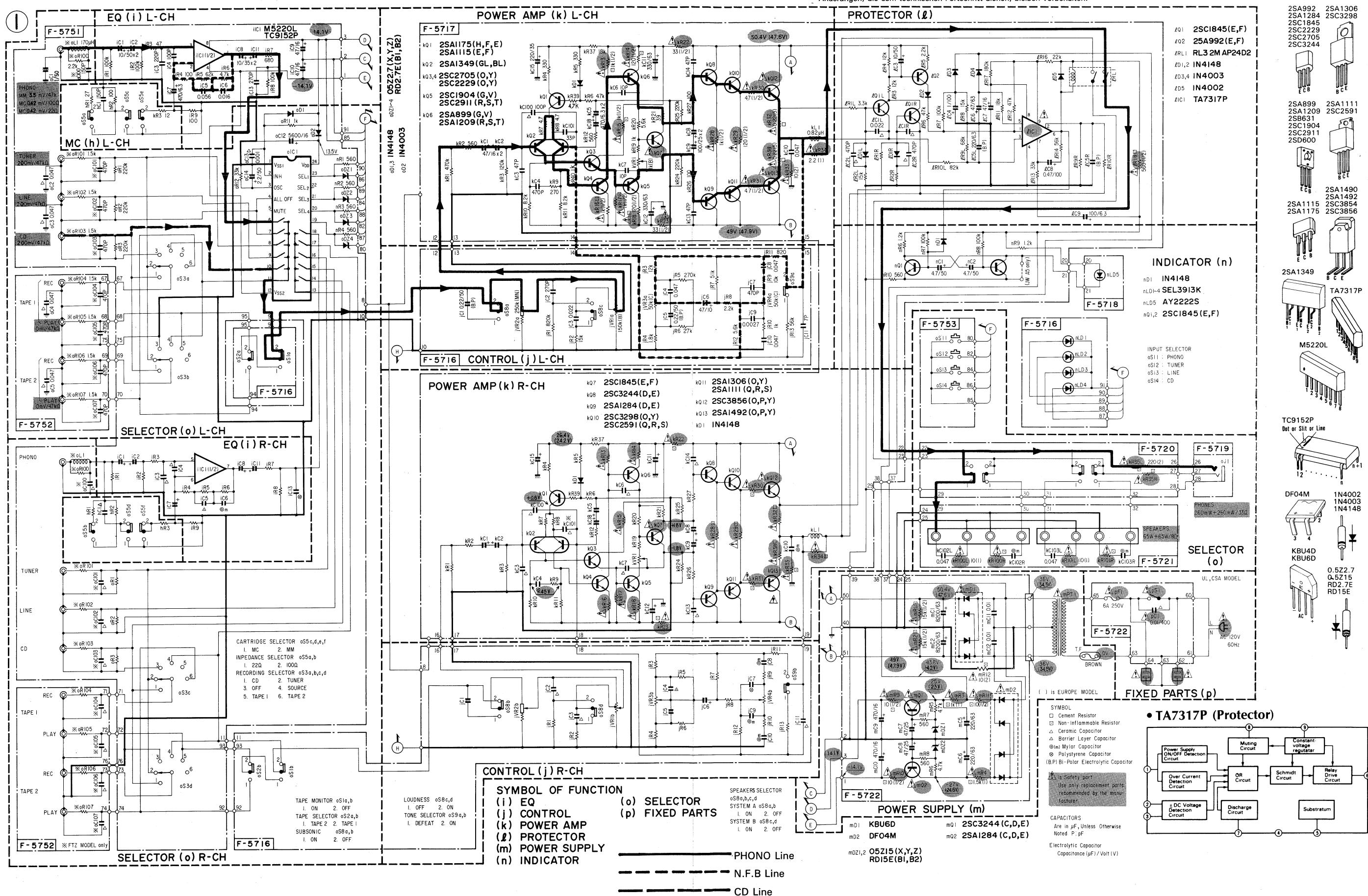
E

F

G

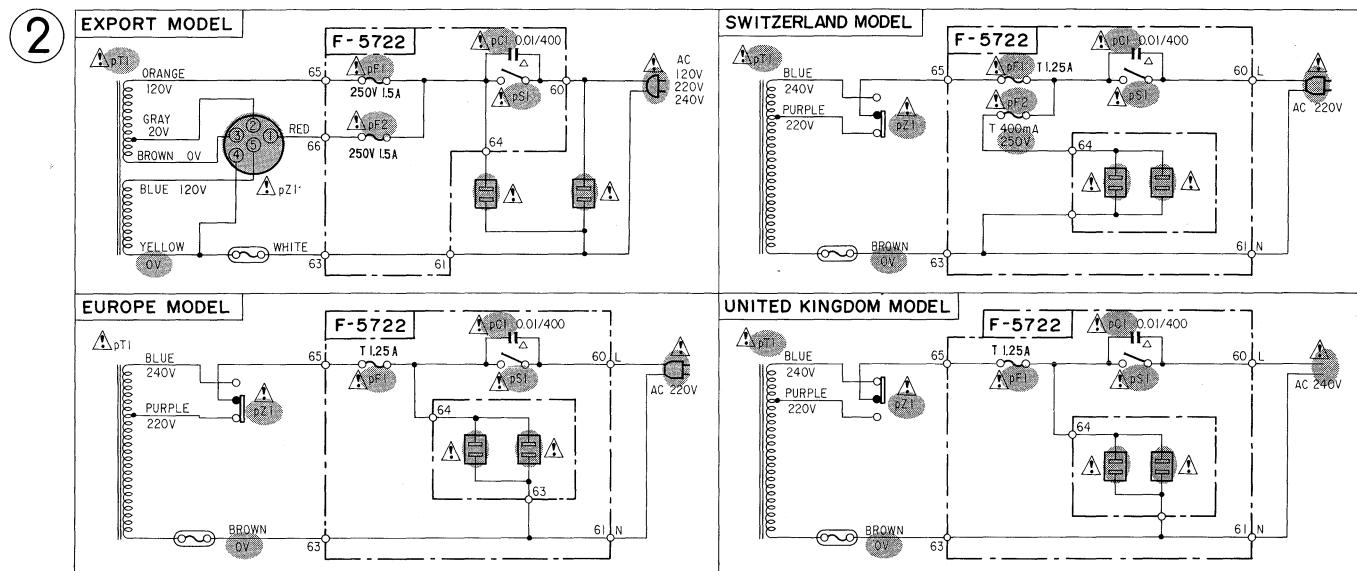
H

## 6-2. AU-X301 Main Section



**A****B****C****D**

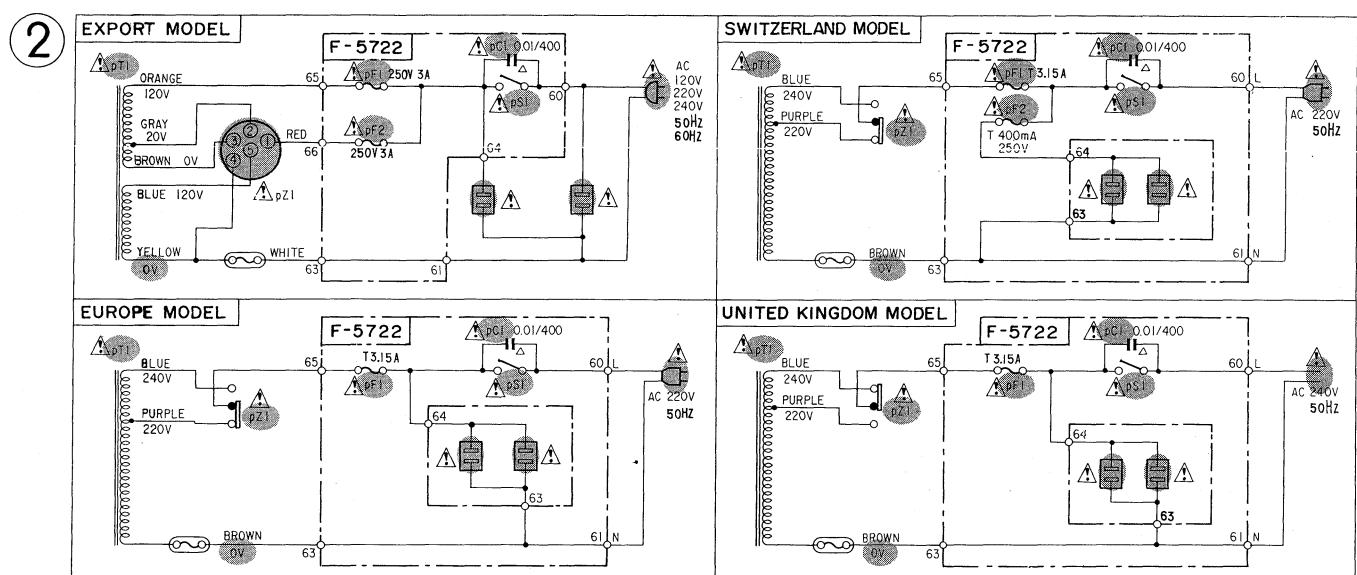
### 6-3. AU-X201 Power Supply (Primaly-side) Section



▲ is Safety part  
Use only replacement parts recommended by the manufacturer.

\* Design and specifications subject to change without notice for improvement.  
\* La présentation et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.  
\* Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.

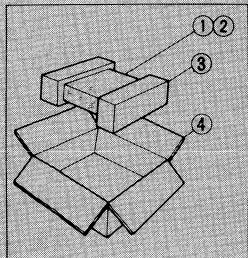
### 6-4. AU-X301 Power Supply (Primaly-side) Section



1  
2  
3  
4  
5

## 7. PACKING LIST

Parts No.	Stock No.	Description
1	47428000	Polyethylene Sheet
2	47859600	Vinyl Bag
3	84527300	Styrofoam Packing
4	84531700	Carton Case (AU-X201)
	84524300	Carton Case (AU-X301)



## 8. ACCESSORY LIST

Stock No.	Description
49025900	Operating Instruction (E·F·S)
49026000	Operating Instruction (G·I·Sw)

**Note:**

**E·F·S:** English·French· and Spanish Version  
**G·I·Sw:** German·Italian· and Swedish Version

**Sansui**

SANSUI ELECTRIC CO., LTD.:

SANSUI ELECTRONICS CORPORATION:

SANSUI ELECTRONICS (U.K.) LTD.:

SANSUI ELECTRONICS G.M.B.H.:

14-1, Izumi 2-chome, Suginami-ku, Tokyo 168 Japan

PHONE: (03) 324-8891/TELEX: 232-2076 (International Division)

1250 Valley Brook Ave, Lyndhurst, N.J. 07071 U.S.A.

17150 South Margay Ave, Carson, California 90746 U.S.A.

3036 Koapaka Street, Honolulu, Hawaii 96819 U.S.A.

Unit 10A, Lyon Industrial Estate, Rockware Avenue, Greenford, Middx UB6, OAA, England

Paul Ehrich Strasse 8, 6074 Rödermark 2, West Germany

(SM1-379)

Printed in Japan < Stock No. 36533600 >